Volume 17, Issue 37   Atari Online News, Etc.   October 2, 2015

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~ Atari Search Engine!   ~ People Are Talking!   ~ Fixing Tony Hawk 5!
~ Prepare for El Capitan ~ No IPv4 Web Addresses! ~ Firebee News Update!

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    ~ Lenovo Is Caught Again ~ Apple's New El Capitan ~ Vigilante Virus!
    ~ Twitter's New Re/code! ~ Google Goes Alphabet!  ~ New Vulnerability!

              -* FCC: Lock Down Wi-fi Routera? *-
             -* Facebook Goes Down for Third Time!  *-
            -* Russia Dislikes New Same Sex Emoji Couples *-



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->From the Editor's Keyboard              "Saying it like it is!"
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Welcome to October, and Fall-like weather! A major hurricane is
drawing near to the eastern coast of the U.S.; and it's been cold,
wet and dreary for most of this week! Fortunately, if the latest
forecast holds true, we'll miss getting hit by Hurricane Joaquin!
Certainly, eastern United States doesn't need another major storm
bearing down on it! Let's hope that it continues to track to the
north and east - and stay out with the fish!

Meanwhile, I hope you all manage to stay warm and dry!

Until next time...


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                       Atari Search Engine
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Francois Le Coat

The ATARI bookmarks page <http://eureka.atari.org/atari.html> was
updated. The goal consists in valid links, even if it corresponds
to sometimes dated information. Part of these bookmarks persist
since the creation of the WEB site, back to the year 1996.

The interest with those numerous bookmarks, there's about 800, is
to constitute an ATARI uptodate and dedicated search engine of the
on-line scene. It is a service provided by Google Co-op. The base
of this engine is a collection composed from time to time. It's
now quite consistent.

This is a WEB 2.0 experience, because even if I'm responsible for
its creation, the *ATARI Search Engine* can possibly be integrated
by ATARI web-masters adding its HTML code.
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```
<script>
   (function() {
```

```
    var cx = '014753128619202207476:tzogojpdahi';
    var gcse = document.createElement('script');
    gcse.type = 'text/javascript';
    gcse.async = true;
    gcse.src = (document.location.protocol == 'https:' ? 'https:' :
'http:') +
        '//cse.google.com/cse.js?cx=' + cx;
    var s = document.getElementsByTagName('script')[0];
    s.parentNode.insertBefore(gcse, s);
  })();
</script>
<gcse:search></gcse:search>
_____


Have a good ATARI WEB Surfing =)


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François LE COAT
Author of Eureka 2.12 (2D Graph Describer, 3D Modeller)
http://eureka.atari.org/
http://is.gd/atarian
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                    FireBee News Update

Fred Horvat

I came across something recently that may be of interest if you
are interested in seeing what the FireBee Operating System looks
and feels like. There is an Aranym Disk Image available. Here
is the description directly from the http://acp.atari.org/ web
site.

 FireBee FreeMiNT setup for ARAnyM

Several users were very enthusiastic about Jo Even Skarsteins
FreeMiNT setup for the FireBee . The easyness and totally GEM
dedication (means no Unix Stuff at all) of the setup became
interesting for others without FireBee as well. So after "Vanilla
MiNT" - a kind of FireBee FreeMiNT Setup spin-off - a very easy
to use setup for your other Atari hardware, popped up, now an
external developer cared about an 1:1 implementation of our
FireBee setup for ARAnyM, the virtual machines, which exist for
several host systems. The MiNT setup is identical to what you
get with the FireBee, except the fact that binaries were
exchanged with the ones for Aranym. Some GEM applications are
not able to work, as they require real hardware. That setup is
available as well as a disc image, for immediate usage. First
feedback went very well, and it seems ProToS· initiative was
just in time, to support ARAnyM users.

If interested you can download it from here:
http://the.protos.free.fr/FireBee_Aranym/FireBee-FreeMiNT-setup-Aranym-img.zip

Even though I have a FireBee I have downloaded it and am testing
on installing the Unix commands and Command Line manually because
EasyMiNT Installer fails to complete the installation on the

FireBee. In a future submission I will let you know how that
turned out.

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->In This Week's Gaming Section - Activision Working To Fix Woeful Tony Hawk s
Pro Skater 5!
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->A-ONE's Game Console Industry News   - The Latest Gaming News!
   """""""""""""""""""""""""""""""""""

Activision Is Working To Fix The Woeful Tony Hawk s Pro Skater 5

Tony Hawk s Pro Skater 5 is a bad game, not least because of a
multitude of bugs and glitches.

Now, publisher Activision says it s working to fix some of these
issues, and it s giving players two new stages and five new
characters by means of apology. Given that the PlayStation 4
version of the skating simulator is currently sitting on a
shockingly low score of 27 on Metacritic (and a user score of
just 1.8), Activision and developer Robomodo are going to need
to work some serious magic in order to salvage the franchise s
battered reputation.

 We are aware of the issues that players have experienced
following the launch of Tony Hawk s Pro Skater 5, said
Activision in a statement sent to Eurogamer, and are working
with the developer to address these so that we can continue to
improve the gameplay experience for all of the Tony Hawk fans
who have known and loved this franchise for more than 16
years.

Batman: Arkham Knight s PC version was another recent
high-profile release that suffered from major technical issues,
and publisher Warner Bros. has pulled it from sale while it
works on a fix. It ll be interesting to see if Activision has
to take similar measures, given Pro Skater 5 s critical
mauling.

Metacritic user InvasiveWaiter scored the game 0 out of 10,
saying, This game is nothing but digital waste. How any
company would dare to ask $60 for a game with minimal content
and a multitude of technical bugs, I cannot fathom.

A-ONE's Headline News
The Latest in Computer Technology News
Compiled by: Dana P. Jacobson

Lenovo Caught (3rd Time) Pre-Installing Spyware on Its Laptops

Lenovo has once again been caught installing spyware on its
laptops and workstations without the user's permission or
knowledge.

One of the most popular computer manufacturers is being
criticized for selling some refurbished laptop models
pre-installed with invasive marketing software that sends users
data directly to the company.

This is not first time Lenovo has allegedly installed spyware
onto consumers PCs.

    Earlier this year, Lenovo was caught red-handed for selling
laptops pre-installed with Superfish malware that opened up doors
for hackers.
    In August, Lenovo again got caught installing unwanted and
non-removable crapware into part of the BIOS reserved for custom
drivers.

Now, the Chinese computer manufacturer is making news once again
for embedding tracking software into its laptops and
workstations from Lenovo ThinkPad, ThinkCentre, and ThinkStation
series.

Michael Horowitz from Computerworld has discovered a software
program, called "Lenovo Customer Feedback Program 64," that
operates daily on these systems and can be categorized as
Spyware.

The purpose of this program is to send customers' feedback data
to Lenovo servers. According to Horowitz, the company has
mentioned this in its EULA, but he "can not recall ever being
asked [for] a Customer Feedback program" while ever setting up
his Lenovo PC.

Horowitz also found that this program includes some other files,
which is as follows:

    Lenovo.TVT.CustomerFeedback.Agent.exe.config
    Lenovo.TVT.CustomerFeedback.InnovApps.dll
    Lenovo.TVT.CustomerFeedback.OmnitureSiteCatalyst.dll

One of these files belongs to Omniture, which is an online
marketing and Web analytics company, which is included to track

and monitor users' activities and send that data to this online
marketing agency.

Lenovo does mention on its website that there may be software
program installed on its systems that connect to its online
servers, but it does not mention anything about sending your
data for financial profit.

How to Remove Lenovo Spyware?

In order to remove 'Lenovo Customer Feedback Program 64' from
your affected machines, you have to do it manually. Follow these
simple steps:

    Know your System Type (whether it's a 32-bit or 64-bit
    version of Windows)
    Download TaskSchedulerView
    Now, search your Lenovo PCs for Lenovo Customer Feedback
    Program 64
    Disable Lenovo Customer Feedback Program 64 daily task
    from running
    Additionally, you can also rename the "C:\Program Files
    (x86)\Lenovo"

Hey FCC, Don t Lock Down Our Wi-Fi Routers

On the coastal edge of Tunisia, a signal bounces between
11 rooftops and 12 routers, forming an invisible net that covers
70 percent of the city of Sayada. Strategically placed, the
routers link together community centers from the main street to
the marketplace. Not long ago, the Zine el-Abidine Ben Ali
government censored access to the Internet. The regime is gone
now. And this free network gives the community unfettered access
to thousands of books, secure chat and file sharing
applications, street maps, and more.

The Sayada community network is part of the Open Technology
Institute s (OTI) Commotion Wireless project. The organization
works with local groups to install mesh networks in communities
across the globe from New York to India. Commotion Wireless uses
routers that utilize and extend (among other things) OpenWRT an
open source operating system with nonstandard features that make
these unique networks possible. Reprogrammed and repurposed, the
routers become something entirely new: a hub of information, a
beacon of open access, and a symbol of freedom.

Now, the future of Commotion Wireless   and countless other
programs and projects like it   might be in jeopardy. Proposed
rules by the Federal Communications Commission have digital
watchdogs and open source advocates worried that manufacturers
will lock down routers, blocking the installation of third-party
firmware   including open source software like OpenWRT and DD-WRT.

In March of 2014, the FCC updated its requirements for U-NII
devices operating on the 5 Ghz bandwidth a designation that
covers a wide range of Wi-Fi devices and routers. FCC regulations
aren t the sort of the thing you keep on your nightstand for a

bit of light reading they are technical and dense. And so it wasn t until last month that Wi-Fi hobbyists pointed out some regulatory language that might affect the open source community:

Manufacturers must implement security features in any digitally modulated devices capable of operating in any of the U-NII bands, so that third parties are not able to reprogram the device to operate outside the parameters for which the device was certified.

On its own, the language isn t a deliberate war on modding. In this particular case, this is about safety, said William Lumpkins, Sr. Member IEEE, IEEE Sensors Council/SMC Standards Chair. Most modern equipment from laptops to planes emits radio frequencies (RF). And the FCC carefully orchestrates traffic to ensure signals don t get tangled up. Devices modified to operate beyond their intended parameters can cause interference with important systems (the FCC cites a 2009 case where user-modified devices were getting in the way of Doppler Weather Radars).

RF modding could also interfere with medical devices like pacemakers, optical implants, diabetic insulin regulators, and a slew of other medical devices, Lumpkins said. An insidious person could also turn a radio into a white noise generator and not allow anyone to use Wi-Fi/Bluetooth within a 1500 foot radius, which is what a few well-intentioned theater owners tried last year.

It isn t unusual, Lumpkins said, for the FCC to take steps to keep devices operating within their intended parameters. What is unusual, Lumpkins added, is for the FCC to call out by name specific software. But that s exactly what the FCC did.

This March, the FCC published a guideline to help manufacturers meet the new requirements for the hundreds of new routers and access points that hit the American market every single year. One prompt read: Describe in detail how the device is protected from flashing and the installation of third-party firmware such as DD-WRT.

And that s a big red flag: DD-WRT, like OpenWRT, is a free, Linux-based firmware for wireless routers and access points. The two are widely used within the tinkering community and they are important.

So, is the FCC mandating that manufacturers lock down the whole router including its operating system? Not really. The guidance is more what you d call (badly worded) guidelines than actual rules. More importantly, guidances aren t written by the same people who write the actual regulations. In fact, the FCC explicitly told TechDirt s Karl Bode that it s fine with mods and open source software as long as they do not add the functionality to modify the underlying operating characteristics of the RF parameters. So, modding the operating system? Okay. Modding the RF parameters? Not cool.

The real worry is that major chip manufacturers will respond by saying the easiest thing for us to do is lock down all the middleware rather than worry about where to draw the line. That would potentially kill a lot of innovation and valuable uses,

wireless policy guru Harold Feld told TechDirt.

And that s a real concern. Especially as the FCC is currently
considering a proposal that would expand the rules to anything
with a software-defined radio. Which could apply to pretty much
anything because everything with Wi-Fi-capability is essentially
a radio. The FCC s current Notice of Proposed Rulemaking (NPRM)
seeks to minimize the potential for unauthorized modification
to the software that controls the RF parameters of [a] device
by implementing well-defined measures to ensure the equipment
 is not capable of operating with RF-controlling software for
which it has not been approved.

No word on what those well-defined measures actually are   or
where the radio ends and the rest of the device begins   but
digital watchdogs are worried that the new rules could prompt
manufacturers to lock down any computing devices with a wireless
radio. Of course, if you re technically inclined (and most
people who take the time to reflash routers are), it s not hard
to pick digital locks that protect vendor programming. It s just
that breaking those locks opens tinkerers up to prosecution
under the Digital Millennium Copyright Act a distinction comes
with up to 5 years in prison and $500,000 fine. But that s a
whole other can of worms.

The primary concern is this: If manufacturers take the NPRM and
the guidance as an invitation to lock down routers and Wi-Fi
devices, it would be a huge loss to the tinkering community and
a net loss to society. Open source software gives users far
more control over devices than proprietary vendor firmware
thousands of people have used open source firmware to unlock new
functionality on cheap routers or breath new life into old
access points.

 I personally use OpenWRT on my home wireless router because it
provides more capabilities than the firmware that came
pre-installed, Oakland resident Kerrick Staley wrote in a
letter to the FCC. OpenWRT, being open source, encounters far
fewer vulnerabilities than manufacturer firmwares, and existing
vulnerabilities are fixed quicker, meaning my home network stays
more secure.

Staley s not exaggerating about the security benefits. Open
source systems are more easily audited by security researchers,
and OpenWRT has occasionally beaten the big router manufacturers
to market with security patches for their own hardware.

It s not just the the high-tech nerds who are taking issue with
the FCC s proposed rules. Wi-Fi routers are easy to repurpose as
hotspots, wireless repeaters, network storage devices, and
low-cost wireless networks; they can be cheaply and quickly
patched together as a communication stopgap after emergencies.
Which is why amateur radio operators have also stepped up to
caution the FCC on its new proposed restriction to software
defined radios.

 In at least the last 5 years, Amateur Radio operators have
found new and inventive ways to use these inexpensive devices
to build broadband networks in support of community events, and
to prepare for deployment of these devices for emergency

incidents, wrote ham radio operator James Kinter, Jr.   Third
party software (OpenWRT, DD-WRT, etc) is the basis for many of
the Amateur Radio projects, that we then expand and customise
for our own projects to easily allow us to build these projects
without reinventing the wheel.

The FCC is currently asking for feedback on the NPRM before the
rules become law so now is the time to pipe up. The FCC has
already received tons of concerned comments from citizens and
organizations around the nation most of them extolling the
virtues of open source software and asking the FCC to make sure
consumers aren t locked out of their own routers and Wi-Fi
devices.

Yes, regulating the airwaves is important   especially as more
and more Wi-Fi-enabled devices explode onto the market. But
encouraging manufacturers (even unintentionally) to lock down
entire devices making every part of them, as opposed to just
the radio, unmodifiable is the regulatory equivalent of using a
rocket launcher to eliminate with a rat infestation. You might
get the rats, but at what cost?

In this case, I m hoping that open source communities don t
wind up as collateral damage.

           Facebook Goes Down for the Third Time in Three Weeks

Facebook's app and website appear to be slowly coming back online
after both went down for many users Monday afternoon   the third
outage for the social network in as many weeks.

It's not clear how many of Facebook's users were affected by the
disruption, though it appeared to be widespread. A Facebook
spokesperson told Mashable the source of the outage was a
configuration issue, and that the company was working on getting
Facebook s services back online.

"We re currently restoring Facebook services that people had
trouble accessing earlier today due to a configuration issue.
We re working to bring things back to normal for everyone. We
apologize to those who have been inconvenienced.

While Facebook's website appeared to load very slowly for some
users, the app and website were inaccessible to many Monday
afternoon.

Facebook's platform status dashboard noted there was a "major
outage" beginning at about 12 p.m PT. The dashboard monitors the
performance of the Facebook Graph API, which is used by many
developers that integrate their services with Facebook.

A message on the dashboard confirmed the issue Monday. "A
Facebook-wide issue is causing the Facebook Graph API to be
temporarily unavailable. We re working with our core
infrastructure teams to identify the issue and will update you
when we have more information." Soon after, the performance
dashboard also went down and was inaccessible.

The outage marks the third time the service has gone down in the last three weeks. The site previously experienced issues on Sept. 17 and Sept. 24. Monday's issues appeared to be more severe than those that caused the earlier disruptions.

Many took to Twitter to complain about the disruption, where the #FacebookDown hashtag began trending.

Russia Dislikes Apple s Same-sex Emoji Couples As Much As It Hates The Real Thing

Following previous campaigns against the Eurovision Song Contest, Lady Gaga, and Game of Thrones, anti-gay lawmakers in Russia are targeting a new cultural threat: same-sex emoji couples.

Police in the Kirov region are investigating whether the tiny yellow couples present in Apple s built-in iOS keyboard pose a violation of the country s widely-criticized law banning the propaganda of nontraditional sexual relations to minors. The broadly-worded 2013 legislation has been used to arrest and detain peaceful demonstrators of LGBT rights.

The emoji suit was launched in August by Yaroslav Mikhailov, a Kirov attorney who previously made international headlines for instigating a police investigation into an opposition journalist who posted an Instagram photo of herself dressed up as an Orthodox priest. Mikhailov brought the emojis to the attention of his local police force, who agreed to open an official investigation, according to local news site Gazeta.ru.

If found in violation of the law, Apple could face fines of 800,000 to 1 million rubles ($12,200-15,250) and a three-month suspension in Russia.

Russia s political elite have a complicated relationship with Apple, often railing against the company as a standard-bearer of Western cultural hegemony even while being photographed using its products. Last year, St. Petersburg city council member Vitaly Milonov suggested barring CEO Tim Cook from Russia for life because he is gay.

This Vigilante Virus Protects You Against Malware Attacks

Forget about traditional PC malware: Infecting routers and other Internet-connected devices is the new hotness among malicious actors, given its effectiveness and relative ease. But there s a new sort of malware swirling across the web vigilante code that infiltrates your router and Internet of Things devices and then actually hardens them against traditional attacks, leaving helpful messages and homages to free software activist Richard Stallman in its wake.

Seriously.

Symantec first became aware of the superhero malware dubbed Linux.Wifatch in 2014, when an independent researcher noticed weirdness occurring on his router. As it turns out, the router had been transformed into a zombie, thrall to a large, sophisticated peer-to-peer botnet. He reported via Twitter that he had identified over 13,000 other devices infected with it.

That prompted other researchers to chime in that they too had identified it, variously nicknaming it Reincarna and Zollard which was spotted in Internet-connected devices as far back as 2013.

The P2P network isn t used to conduct denial of service attacks or distribute malware, however. Instead, it passes malware threat updates between the zombies in the botnet, because Wifatch actually eliminates any other malware on your device, including well known families of malware targeting embedded devices, according to Symantec.

That s, well, pretty darn cool but the eradication of other malware isn t a sign of a benevolent infection in and of itself, as nefarious malware has been known to run virus scans in the past not to protect the host device, but to muscle out the competition. Numerous other signs point to Wifatch s vigilante nature, however.

wifatch note
Symantec

A nice message left by the Linux.Wifatch malware.

Once installed, Wifatch hardens a device against traditional attack channels, including killing its legitimate Telnet daemon   but when it does so, it leaves a useful tip if you try to connect via Telnet afterward, imploring you to update the device s firmware and change its Telnet password, as seen above.

Furthermore, the source code contains the following plea for law enforcement officials, which is a reference to the email signature of GNU guru Richard Stallman:

     To any NSA and FBI agents reading this: Please consider whether defending the US Constitution against all enemies, foreign or domestic, requires you to follow Snowden s example.

     EOF

The Wifatch malware even includes an exploit module for Dahua DVR CCTV systems that forces them to reboot weekly. One could speculate that because Wifatch may not be able to properly defend this type of device, instead, its strategy may be to reboot it periodically which would kill running malware and set the device back to a clean state, Symantec s Mario Ballano writes.

The author of Wifatch didn t obfuscate its code; in fact, the malware s source code includes numerous debug messages so that

researchers can more easily dig through it, Symantec reports.

The impact on you at home: This all sounds pretty wonderful,
but Symantec warns that Wifatch infects without consent and
 contains a number of general-purpose back doors that can be
used by the author to carry out potentially malicious actions.
The security firm has been monitoring the Wifatch network for
months, however, and hasn t seen a single sign of malicious
action   and the back doors are cryptographically signed to
ensure commands come from the malware s genuine author, reducing
Wifatch s risk of being hijacked by a truly malicious third
party.

Simply resetting your router will kill Wifatch. To ward off
potential infection, Symantec offers the very same advice as
the malware itself: Update your device s firmware and change
its passwords.

Killer! Unpatched WinRAR Vulnerability Puts 500 Million Users at Risk

Beware Windows Users!

A new dangerous unpatched Zero-day Vulnerability has been detected
in the latest version of WinRAR affects over millions of users
worldwide.

According to Mohammad Reza Espargham, a security researcher at
Vulnerability-Lab, the stable version of WinRAR 5.21 for Windows
computers is vulnerable to Remote Code Execution (RCE) flaw.

WinRAR is one of the most popular utility program used to
compress and decompress files with more than 500 Million
installations worldwide.

The WinRAR RCE vulnerability lie under the High Severity
block, and scores 9 on CVSS (Common Vulnerability Scoring
System).

Let s take a look at its actions.

The vulnerability can be used by any attacker smartly to insert
a malicious HTML code inside the "Text to display in SFX window"
section when the user is creating a new SFX file.

WinRAR SFX is an executable compressed file type containing one
or more file and is capable of extracting the contents of its
own.

According to proof-of-concept video published by Espargham,
latest WinRAR vulnerability allows remote hackers to execute
arbitrary code on a victim's computer when opening an SFX file
(self-extracting file).

Successful Exploitation requires low user interaction, and
results in compromising users :

    System

Network
        Devic

The major disadvantage arises because of SFX files, as they start
functioning as soon as the user clicks on them. Therefore, users
cannot identify and verify if the compressed executable file is a
genuine WinRAR SFX module or a harmful one.

Unfortunately, there is no patch yet available to fix this
vulnerability. However, Windows users are advised to:

        Use an alternate archiving software
        Do not click files received from unknown sources
        Use strict authentication methods to secure your system

        As for any exe file, users must run SFX archives only if
they are sure that such archive is received from a trustworthy
source. SFX archive can silently run any exe file contained in
an archive, and this is the official feature needed for software
installers , WinRAR developer team at RARLAB quoted.

Uh-oh! North America Runs Completely Out of IPv4 Internet Addresses

Two months ago, THN reported about a similar announcement made by
The American Registry for Internet Numbers (ARIN), which said
that the agency is no longer able to produce IPv4 addresses in
North America.

Within a time frame of few months, ARIN, which handles Internet
addresses in America, has announced the final exhaustion of
their free pool of IPv4 addresses has reached zero...

...i.e. the availability of IPv4 (Internet Protocol version 4)
addresses no more exists.

Meanwhile, they are going to accept requests for IPv4, which
will be approved via two ways:

        Wait List for Unmet IPv4 Requests - Join the waitlist for
unmet requests in the hopes that a block of the desired size will
be available in the future.
        IPv4 Transfer Market - Can be purchased from another
organization that has more than it needs.

So, in the future, IPv4 address space will be allocated to the
approved requests on the Waiting List for Unmet Requests, if ARIN:

        receives any IPv4 address space from IANA (Internet Assigned
        Numbers Authority),
        recovers from cancellations, or
        returns from organizations.

They say, "The source entity (-ies within the ARIN Region (8.4))
will be ineligible to receive any further IPv4 address
allocations or assignments from ARIN for a period of 12 months
after a transfer approval, or until the exhaustion of ARIN's IPv4
space, whichever occurs first."

These changes will impact the organizations existing in Transfers between Specified Recipients within the ARIN Region (Transfer 8.3) and Inter-RIR Transfers to Specified Recipients (Transfer 8.4).

RIR refers to Regional Internet Registry, like ARIN, which is one of the RIRs.

Also, if they are successful in allotting IPv4 address pool to the waiting list entities and are still left with IPv4 addresses, then they will open the free pool for IPv4 addresses and add them there for future use.

We see this is just the start of an era (IPv6).

IPv6 was invented in about two decades ago in 1998, and it features much longer addresses, such as FE80:0000:0000:0000:0202:B3FF:FE1E:8329. This means that IPv6 will offer a total available pool of 340 Trillion Trillion Trillion addresses, providing capacity for a very long term.

Prepare Your Mac For the OS X 10.11 'El Capitan' Upgrade

Apple is scheduled to release the next version of OS X - OS X 10.11 'El Capitan - later today, which means that you still have time to carry out some last-minute preparations ahead of the upgrade.

Will your Mac run El Capitan?

Before you go all hog wild excited, first make sure that your Mac can run El Capitan.

The simple rule of thumb is that if you re running OS X 10.9 Mavericks or OS X 10.10 Yosemite then you re good to go, although not all features will be available to those running older hardware. Upgrades to El Capitan are possible from OS X versions going back to Snow Leopard (10.6).

If you re running OS X 10.5 Leopard then you ll have to upgrade to Snow Leopard first via the old-school method of using a DVD. The privilege of upgrading to Snow Leopard just so you can download the free El Capitan upgrade will cost you $20.

Here is a complete list of compatible Macs:

    iMac: Mid 2007 or newer
    MacBook: Aluminum Late 2008 | Early 2009 or newer
    MacBook Air: Late 2008 or newer
    MacBook Pro: 13-inch, Mid 2009 or newer | 15-inch, Mid/Late
    2007 or newer | 17-inch, Late 2007 or newer
    Mac Mini: Early 2009 or newer
    Mac Pro: Early 2008 or newer
    Xserve: Early 2009

What about disk space?

You re going to need around 10GB of free space to carry out the upgrade. If you know your way around OS X then you ll know some of the places to look for detritus that you can delete (think the Downloads or MobileSync folders, or that folder on your desktop where you keep all the funny memes and cat videos you ve found).

If you re not that familiar with the OS X file system then there are apps that can help you do this, such as DaisyDisk or Clean My Mac.

It s a good idea to upgrade any and all apps (those downloaded from the Mac App Store and those that have come directly from the vendor) that you use before shifting up to El Capitan. But bear a few things in mind:

    Some developers may not have released El Capitan-compatible apps yet, so things that used to work might not work the same once you ve upgraded.
    Some apps will require a paid upgrade, so factor that cost into the equation.
    Abandoned apps won t receive upgrades, so if the upgrade to El Capitan breaks something, well, you re then the proud owner of a broken app.

RoaringApps has an excellent resource for checking out application compatibility.

Backup. Backup! BACKUP!!!

Picture this scenario. You ve tried to upgrade your Mac but something catastrophic happened, and now all your data is gone? Would you be sad? Angry? Upset? Paralyzed with fear over everything you ve lost?

Well, fear not. Realize that none of this has yet happened and MAKE A BACKUP OF YOUR SYSTEM BEFORE YOU CARRY OUT THE UPGRADE!

Not really vital but I like to do this for peace of mind because OS upgrades put quite a strain on storage.

To do this go to Applications > Utilities and fire up Disk Utility. Select your startup partition in the left column (located under your storage device s name) and then click Verify Disk.

If you discover any problems then you d be foolhardy to perform an upgrade before fixing those issues.

If you re using any third-party disk encryption software, you d be wise to disable this before the upgrade, because if things go wrong, you re going to be in a world of pain (and more than likely reaching for that backup you just made).

Same goes for Snow Leopard users with FileVault enabled. Disable this, carry out the upgrade, and then switch to FileVault 2.

Don t rush!

I know that new stuff is cool, and it s doubly cool when it s free, but there s no reason to rush into upgrading to El Capitan.

If your system is critical, then it might be a good idea to hold back on upgrading. After all, it s not like El Capitan is a limited resource. If you don t upgrade today, it ll still be there when you decide you re ready, complete with patches and bug-fixes.

To be honest with you, if my job wasn t partly to feel the pain of newly released stuff so you don t have to, I d probably give El Capitan a few weeks more to mature before installing it, and I won t install it on my main workhorses until I ve seen what mayhem it s going to cause on non-vital 'sacrificial systems first.

Sometimes you gotta slow down to go fast.

Ready to upgrade?

Hit the Mac App Store, click that button, and wait for the update to roll in.

Apple s OS X El Capitan: Speed and Small Touchups, Free of Charge

You know how Apple redesigns the iPhone in every even-numbered year and then comes out with a slightly tweaked s version in odd-numbered years? (iPhone 4s, 5s, 6s)?

Well, they do the same thing with the Mac s operating system. Last year, it was a major redesign called OS X Yosemite. And tomorrow, it s a slightly tweaked version called Yosemite S.

Sorry, wait that s what it should be called. Its actual name is El Capitan.

Why is it called El Capitan? Most non-Californians may not realize that El Capitan is a rock formation within Yosemite National Park. (Past annual successions of OS X versions were called Lion and then Mountain Lion,   Leopard and then Snow Leopard.) Kinda makes sense.

El Capitan doesn t look any different from the last version; instead, it s a representation of all the little nips and tucks that Apple engineers wished they d had time to put into the last version.

The big-ticket item, Apple says, is speed. Programs open up to 1.4 times as fast. Switching programs is twice as fast. Opening a PDF document is four times as fast. Animations for example, when you switch between virtual monitors in full-screen mode feel smoother and faster. Thanks to huge improvements in Metal, Apple s developer toolkit for 3-D graphics, games and graphics apps can enjoy great acceleration (if updated accordingly).

There is no circumstance, Apple says, where your Mac will feel slower after installing El Capitan. (That s a happy bit of news for anyone who remembers iOS 8 slowing down their iPhones, for example.)

I ve found that to be true: You notice the speedup right away, and speed is good.

As a handy bonus, you won t need to upgrade your Mac to run El Capitan. It runs on almost any Mac that can now run Yosemite, or Mavericks before it, or Mountain Lion before that.

A system-software version that still runs on 8-year-old machines? Nicely done, Apple.

If you re in a hurry, here s the bottom line: Download and install El Capitan. There s zero reason not to. Everything runs just as it did before. I couldn t find a single app that didn t run perfectly after the installation. (Well, one: My favorite calendar program, BusyCal, went black during the calendar page turns, where there d normally be an animation. An update fixed the problem.)

If you have a little more time, here s a list of what else is new in El Capitan. (It s adapted from my preview writeup from June.)

This time around, Apple isn t boasting, over 200 new features. Over 20 new features would be more like it. They re subtle. They re grace notes. They re motley. They ll be welcomed by people already using Macs, but won t do anything to sway someone who already loves Windows:

    Wiggle the cursor to magnify it. Whenever you can t find your cursor, a lot of people rapidly scrub the trackpad (or wiggle the mouse), just so you can find the cursor on the screen. (Especially if it s a big screen.) In El Capitan, whenever you wiggle the cursor that way, the cursor momentarily becomes gigantic to draw your eye.

    Notes. After years of boringness, Apple s Notes program has suddenly sprouted an array of formatting features that practically turn it into OneNote or EverNote. Now there s full type formatting, bulleted lists, checklists, Web links, and pasted graphics, videos, or maps. All of this gets synced automatically to your iPhone or iPad, too, if it has iOS 9 on it. The new Attachments Browser lets you view a palette of all the photos, videos, maps, and Web links you ve added in all your notes, which is surprisingly handy. A new New Note option appears in the Share menu of Safari and other apps.

    Maps. Apple s Maps takes a timid step toward overcoming Google Maps overwhelming superiority by adding public-transportation directions   for four U.S. cities (San Francisco, New York, Baltimore, and Washington DC). Google Maps, by contrast, has transit schedules and directions for every major city around the world and offers walking directions, too.

    Split screen in full-screen mode. In full-screen mode, your document window fills the entire monitor, and the menu bar and window edges are hidden. In El Capitan, you can now split the screen between two full-screen apps, displaying them side-by-side, or move the dividing line between them. (Where have we seen this sort of thing before? Oh yeah Windows 8.)

Redesigned Mission Control. Misson Control is a special view that helps you find one lost window among your ocean of them. It shrinks all of your open windows to miniatures, all simultaneously visible. In El Capitan, they re no longer clumped by program; you can see them all spread out. (Mac veterans will recognize this effect as the old ExposØ.)

Redesigned Spaces. Spaces is a somewhat confusing power-user feature that lets you create several side-by-side virtual monitors, each with its own programs and windows. In El Capitan, the Spaces bar is more compact and easier to operate (you can see it above) you don t have to open System Preferences to make changes. You can just drag a window s title bar to the top of your screen to add it to an existing Space or put it into a new one.

Spotlight updates

Apple has put quite a bit of work into Spotlight, the Mac s built-in search feature:

More kinds of Web info. Into the Spotlight search bar, you can now type search terms for weather, sports, stocks, athletes, public transportation, and online videos. You can type, for example, yankees schedule,   lebron james,   weather Tuesday London, or goog (to find out Google s stock price). You can type jimmy fallon to see the latest YouTube, Vimeo, or Vevo clips from that show. Or type GrandCentral or 7th ave subway to see the current schedules for those trains. In each case, the search-results panel offers a tidy display of information on your query.

Resize or move the Spotlight window. You can now make the Spotlight window taller but not, weirdly, wider. You can also drag it around your screen. For example, if you like to use Spotlight as a calculator (yes, you can type, for example, 37*12 into it to get the result), you can now park the window at the edge of your screen so you can keep working in your main program. (Undocumented tip: To restore the Spotlight window to its original size and position, hold the cursor down on the Spotlight icon the magnifying-glass at the top right of your screen.)

Prose (natural language) searches. One more Spotlight upgrade: You can now type out queries that describe what you re looking for like files I worked on in January, or slides from 2013 containing WidgeTech, or images from last year. In general, the kinds of information Spotlight understands here are file types (documents, movies, images, presentations, email and so on), the words and phrases inside each file, dates and times, and the names of email senders or recipients.

Mail updates

Mail, the built-in email program, received just a touch of love from Apple this year:

Speed boost. Apple reworked the way Mail checks IMAP email accounts to make it feel faster, especially over slow connections.

Gestures. You can now swipe to the right (two fingers on your trackpad) to mark a message as read or unread, and swipe to the left to delete it. This trick works even on messages in a background list, while a different message s window is open in front.

More natural-language searching. As with Spotlight, prose queries have now come to Mail. You can search for, for example, mail from Chris I haven t read, or messages with attachments from last week.

Calendar suggestions. If Mail detects that a message contains the details for an appointment or a flight, it offers to add it to your calendar, saving you a bunch of copying and typing (just as iOS 8 does now).

Full-screen improvements. In Yosemite Mail s Full-screen mode, if you were reading a message, it commandeered your screen; you couldn t click another message in the list, or refer to another message, without closing the first one. But in El Capitan, if you click outside an open message, its window shrinks down into a tab at the bottom of the screen. You can accumulate a bunch of these tabs, just as you can in a Web browser: remove them, rearrange them, or drag attachments onto them. Obscure, but welcome to full-screen aficionados.

Instant reminders. If you select some text in a message that should be a reminder (Caulk the living room tomorrow), you can right-click it, choose Share->Reminders from the shortcut menu, and presto: a new to-do item in your Reminders app. (You can click the Mail icon in that to-do item later to open the original Mail message.)

Safari updates

Apple has brought a couple of new features to its Safari browser, too. For example:

Pinned tabs. If you drag an open tab all the way to the left, it becomes a compact square pinned tab, one that will always be there, in every window (like the similar feature in Google Chrome). Handy for social-media sites or Web-based email or chat services.

Mute audio. Don t you hate it when some Safari window or tab is playing sound, but you can t figure out which one? Now, whenever audio is playing, a Mute button appears at the top of the Safari window. Click it to shut up all browser windows (while preserving sound from the rest of your Mac, like alert tones and your music player). Or hold your cursor down on it to see a list of browser windows, so that you can mute just the one you don t want.

Instant answers. Certain things you type into the Search bar produce answers right there among the autocomplete suggestions. For example, you can type in a stock s abbreviation to see its latest position, or someone s Twitter name for a link to that person s Twitter page.

The features you ve just read about aren t any surprise, because Apple showed them off onstage in June. But the developer release of El Capitan actually has a huge list of tiny tweaks that Apple didn t mention:

Option to show the toolbar in Safari s full-screen mode.

>From the View menu, choose Always Show Toolbar In Full Screen.

Keyboard shortcuts for tabs. In Yosemite, the keystrokes Command-1 through Command-9 opened the first nine Favorites (bookmarks). In El Capitan, you can, if you prefer, have those keystrokes open your various open tabs instead.

iCloud Drive transfer progress indicator. In a Finder window s sidebar, you now see a progress wheel, so you ll know when your local copies of what s on your iCloud Drive have been backed up to the Web.

Silent clicking option. If you have a MacBook with one of the new force touch trackpads, there s a new option in System Preferences that lets you click completely silently. (On these trackpads, the actual click you feel is an audio fakeout anyway.)

Auto-hide menu bar. If you like, you can make the Mac s menu bar disappear until you move your mouse to the top of the screen. It s the way the menu bar works in full-screen mode now but in El Capitan, you can have it work that way even when you re not in full-screen mode, for a little extra screen space.

Disk Utility. Apple gave its 800-year-old disk-maintenance program, Disk Utility, its first overhaul in ages. Not only does it now show what s eating up your disk space, but it no longer has a Fix Permissions button (a time-honored troubleshooting button in times of glitchiness). Apple says that OS X now fixes permissions automatically every night, and every time you install a program.

New Color Picker. The Color Picker dialog box, a longstanding element of many visually oriented programs, has had a makeover, too. The Crayon picker, for example, is now the Colored Pencils picker. And the most often-used colors get their own swatches right at the top, so you don t have to keep remembering the blue I ve been using is three down and four across in the color grid.

New title-bar option. You can now specify what happens when you double-click a window s title bar: either zoom (enlarge) it or minimize it.

Light sensor. In Displays preferences, a new Ambient light compensation checkbox controls whether or not your laptop s screen brightness adjusts with the room brightness.

 Rename in the shortcut menu. When you right-click a file or folder icon, the Rename command is now one of the choices.

Choice of font in Reader. In Safari s Reader mode (no ads or blinking just pure type on a clean background), you now have a choice of typefaces.

Strikethrough in Mail format bar. In addition to icons for Bold, Italic, and Underline, there s a new one for Strikethrough.

San Francisco font. Apple has now designed a single typeface family for all of its products: Mac, iOS, Apple Watch. It looks a lot like the Lucida Grande the Mac s been using for years, but Apple says it s even more readable.

Photos editing extensions. Photos, the photo-management app, can now accept plug-ins from other companies. Already, various third-party editing extensions are in the works for noise reduction, portrait retouching, funhouse effects, and so on.

Live Photos. The Photos app can play back Live Photos (the three-second video clips that accompany pictures taken with the iPhone 6s and 6s Plus). Point to the icon in the lower-left corner of a photo s thumbnail to play back the video one time.

Batch editing. In Photos, you can now change the names, times, or locations of whole groups of photos at once, via their Get Info boxes.

New Recently Deleted folder in Notes. You ve got a safety net now.

3-finger drag moved. The option to drag an icon by swiping your trackpad with three fingers is now in System Preferences > General > Accessibility > Mouse & Trackpad > Trackpad Options.

Find my Friends widget. The old Dashboard is still in El Capitan; in fact, there s a new widget there that lets you find your friends (if they ve permitted you to track them).

File copy resume. If you were copying some files, but had to shut down your Mac or put it to sleep, OS X is now smart enough to resume the copying next chance it gets.

A redesigned spinning beachball of death cursor. Apple haters, insert your own joke here.

At every press event, Apple boasts about how many of its customers have already adopted Apple s latest phone or Mac operating system. Why is the speed of customer adoption so important?

For three reasons. First, the more people who are using a new OS, the more software companies will feel compelled to update their own apps to exploit the new goodies.

Second, because each new version brings new weapons security standards in the eternal arms race against hackers and evildoers.

And third, because in Apple s case, its software releases are linked. This new Mac OS comes out simultaneously with the new iPhone/iPad OS, and some of their features are designed to work together (like the new Notes format).

Anyway, the changes in El Capitan are, as you re figuring out, very subtle. This new OS X won t throw anyone for a loop.

It is, however, a big speedup with a lot of touch-ups for free. That s what I call a very good deal.

 Twitter Looking Beyond 140 Characters With New Product: Re/code

Micro-blogging website operator Twitter Inc is working on a product that will allow users to share content longer than 140 characters, technology website Re/code reported on Tuesday.

It's unclear what the product will look like, Re/code said.

The company's executives are also discussing changes to how the 140-character limit is measured, such as excluding links and user handles from the count, Re/code reported, citing people familiar with the matter.

Twitter did not immediately respond to a request for comment.

The company removed the 140-character limit from its direct

messages last month.

Increasing the limit has been discussed at Twitter for years, more so in recent months under interim Chief Executive Jack Dorsey as the company looks to grow its user base, sources told Re/code.

Twitter shares were up 1 percent at $25.52 in afternoon trading on the New York Stock Exchange. Up to Monday's close, the stock had fallen nearly 30 percent this year.

Good-bye, Google As We Know It. Hello, Alphabet

This is the last day that Google is operating without a parent company.

After the close of markets Friday, the company officially will become Alphabet and will trade as such on Monday. Google will become a business unit running under the Alphabet umbrella and will focus on core Internet-related businesses, including search, YouTube and Android.

The company announced the official change on its investor relations page.

"Long-term, this could be a big deal, but it must be more than a name change," said Patrick Moorhead, an analyst with Moor Insights & Strategy. "Non-Google companies under Alphabet need to show a few things   like they need to enable innovation and autonomy."

Google announced in August that it was creating a parent company and that Google would become one of its wholly owned subsidiaries.

Alphabet is set to replace Google as the publicly traded entity and shares of Google will be the same number of shares of Alphabet. The company will still trade under the ticker symbol GOOG.

Google won't be the only subsidiary under the Alphabet umbrella.

Google X, the company's secretive research arm that came up with the autonomous car, will become its own business, as will Capital and Ventures, which will concentrate on funding startups.

Before the reorganization, everything the company was working on   search, Android, Chrome, Google Glass, robotics, driverless cars, drones and even smart contact lenses fell under the Google corporate umbrella. With this move, Google will shed all of its research projects, which aren't money makers, and will concentrate on its Internet-based businesses, like search, which is a huge money maker.

Similarly, the company, which has become known for its "moon shots" or outrageous-sounding research, should be able to put even more muscle behind new projects.

Google's research projects, like smart contact lenses that can read blood sugar levels for diabetics, will have its own executives overseeing the work.

With less attention split between money makers and big dreams, Alphabet is expected to be able to do a better job at both.

"This is a big deal because if they can accomplish what they're looking to this puts in place a future operating model for a large company to truly innovate," said Moorhead. "I think this puts a meaningful separation between businesses generating cash, and research and science projects. For the company, it could mean they can keep driving profits today and invest in the far future."

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